

RECEIVED  
CENTRAL FAX CENTER

OFFICIAL

JUL 21 2004

32692

Customer Number

Patent  
Case No.: 56784US002

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: KHANDPUR, ASHISH K.  
Application No.: 09/919595 Group Art Unit: 1771  
Filed: July 31, 2001 Examiner: Chang, Victor S.  
Title: HIGH COHESIVE STRENGTH PRESSURE SENSITIVE ADHESIVE FOAM

DECLARATION UNDER 37 C.F.R. 1.132

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION	
To Fax No.: 703-872-9306	
I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on:	
<i>July 21, 2004</i> Date	<i>Sean J. Edman</i> Signed by: Sean J. Edman

Dear Sir:

I, Ashish K. Khandpur, in response to the rejection of claims 1-10, 13, 15 and 16 under 35 U.S.C. §103(a) as being unpatentable over Gehlsen et al. (U.S. Patent No. 6,103,152), hereby declare that:

1. In 1989 I received a Bachelor of Technology degree in Chemical Engineering from Indian Institute of Technology (IIT), New Delhi, and in 1995 I received a Ph.D. in Chemical Engineering from University of Minnesota, Minneapolis.
2. I have been working in the field of polymer science for 14 years, and have been employed by 3M Company (3M), St. Paul, Minnesota for the past 9 years. Currently, I hold the position of Senior Technical Manager.
3. I am a named inventor in the above-identified patent application.
4. I have read U.S. Patent No. 6,103,152 issued to Gehlsen et al. (the "Gehlsen patent").

5. The Gehlsen patent describes polymer foam materials that include a plurality of expandable polymeric microspheres.

6. The Gehlsen patent does not disclose that the foamed articles can possess a high cohesive strength and/or high modulus without crosslinking or even with "light" crosslinking which would result in good high temperature (70°C) shear performance. Gehlsen fails to describe any way to achieve these properties without extensive crosslinking.

7. Examples 62-70 of the Gehlsen patent (cols. 22-23) describe foams that were prepared without crosslinking (col. 22, lines 14-15) and the shear strength was measured and reported in Table 2 (col. 23, lines 1-15). All of Gehlsen's non-crosslinked foams exhibited low shear strength with failure occurring in less than 200 minutes under a 1000g load at 25°C (see 6<sup>th</sup> column of Table 2). On the other hand, when the Gehlsen foams were crosslinked, they exhibited much higher shear strength, with generally no failures occurring within 10,000 minutes (see 12<sup>th</sup> column of Table 1). In my view, the data presented by the Gehlsen patent show that Gehlsen's non-crosslinked foams exhibited very low shear strength compared to the crosslinked foams. Only when Gehlsen's foams were substantially crosslinked did they exhibit high shear strength. The Gehlsen patent thus fails to describe or suggest a foamed article that is substantially non-crosslinked yet has high shear strength.

8. In contrast, the pending application claims a foamed pressure sensitive adhesive article that exhibits high shear strength without the need to be crosslinked.

9. In my view it would not have been obvious to one of ordinary skill in the art, having in hand the teaching of the Gehlsen patent at the time the present invention was made, that foamed articles such as those claimed in the present application could have been prepared having high shear strength with little or no crosslinking. On the contrary, based on the teaching of Gehlsen, a skilled artisan

would have considered necessary to extensively crosslink the foam in order to provide it with high shear strength.

10. Since extensive crosslinking is the conventional means for providing foamed articles with high shear strength that is described by the Gehlsen patent, it would require more than mere optimization of the methods taught by Gehlsen for one of ordinary skill in the art to obtain a pressure sensitive adhesive foam article having a high shear strength (i.e. a shear holding power of at least 3000 minutes on anodized aluminum at a temperature of 70°C as determined by ASTM 3654 utilizing a sample with dimensions of 25.4 mm by 12.7 mm supporting a 500 g mass) with little or no crosslinking (i.e. a gel content a gel content of less than 25 percent), such as that claimed in the present application.

11. For the above reasons, it is my view that the foamed articles claimed in the present application are not rendered obvious by the Gehlsen patent.

12. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: July 21, 2004



---

Ashish K. Khandpur